



SEQUENCE LISTING

<110> Abbott Laboratories
Mukerji, Pradip

<120> GENES INVOLVED IN POLYKETIDE SYNTHASE
PATHWAYS AND USES THEREOF

<130> 7097US01

<140> 10/619,532

<141> 2003-07-15

<160> 27

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<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> M13 Forward Primer

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23

<210> 2

<211> 713

<212> DNA

<213> T. aureum

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<213> T. aureum

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<213> T. aureum

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<223> n=a,t,c, or g

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<212> DNA
<213> Artificial Sequence

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<223> RO 1447 Forward Primer

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<210> 6
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 <213> Artificial Sequence

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 <223> RO 1448 Reverse Primer

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24

<210> 7
 <211> 1561
 <212> DNA
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 <211> 8748
 <212> DNA
 <213> T. aureum

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Glu	Ala	Lys	Asp	Val	Asp	Ala	Leu	Ser	Arg	Thr	Arg	Thr	Val	Gly	Glu
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Val	Val	Asp	Ala	Met	Lys	Ala	Glu	Ile	Gly	Gly	Gln	Ala	Thr	Ser	Ala
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 Ser Arg Thr Arg Thr Val Gly Glu Val Val Asp Ala Met Lys Ala Glu
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Ala Ser Val Ala Gln Pro Gln Ala Ser Ala Pro Ser Pro Ser Ala Thr		1965
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Ala Ser Val Leu Pro Lys Pro Val Ala Ser Pro Ala Ser Val Asp Pro		1985
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Ala Lys Leu Ala Arg Ala Glu Ala Val Val Met Glu Val Leu Ala Ala		2000
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Lys Thr Gly Tyr Glu Val Asp Met Ile Asp Ala Asp Met Leu Leu Asp		2015
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Gly Thr Gly Cys Glu Asp Leu Ser Leu Cys Ser Ala Ser Val Val Glu		2095
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Gln Ser Val Arg Ser Thr Lys His Val Asp Met Glu Gly Trp Gly Glu		2160
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Ala Asp Leu Val Arg Ala Leu Glu Ala Val Glu Ser Arg Phe Gly Val		2175
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Pro Gly Gly Val Val Val Leu Glu Arg Ala Ser Glu Thr Ala Arg Asp		2190
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 Lys Val Leu Pro Met Thr Val Ala Leu Gly Leu Leu Ala Glu Ala Ala
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 Arg Gly Leu Tyr Val Gly His Gln Val Val Gly Ile Glu Asp Ala Gln

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Gly Lys Gly Ala Leu Tyr Asp Gly Arg Thr Leu Phe His Gly Pro Ala		
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Phe Gln Tyr Met Asp Glu Val Leu Arg Cys Ser Pro Ala Glu Leu Ala		
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35 40 45	
Arg Ile Ala Val Val Gly Met Ala Val Glu Tyr Ala Gly Cys Arg Gly	
50 55 60	
Lys Glu Ala Phe Trp Asp Thr Leu Met Asn Gly Lys Ile Asn Ser Ala	
65 70 75 80	
Cys Ile Ser Asp Asp Arg Leu Gly Ser Ala Arg Arg Glu Glu His Tyr	
85 90 95	
Ala Pro Glu Arg Ser Lys Tyr Ala Asp Thr Phe Cys Asn Glu Arg Tyr	
100 105 110	
Gly Cys Ile Asp Pro Lys Val Asp Asn Glu His Asp Leu Leu Leu Gly	
115 120 125	
Leu Ala Ala Ala Ala Leu Gln Asp Ala Gln Asp Arg Arg Ser Asp Gly	
130 135 140	
Gly Lys Phe Asp Pro Ala Gln Leu Lys Arg Cys Gly Ile Val Ser Gly	
145 150 155 160	
Cys Leu Ser Phe Pro Met Asp Asn Leu Gln Gly Glu Leu Leu Asn Leu	

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Gln	Thr	Pro	Trp	Ser	Thr	Arg	Thr	Arg	Ala	Leu	His	Pro	Leu	Pro	Gly		
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Asp	Pro	Arg	Thr	His	Arg	Asp	Pro	Ala	Ser	Phe	Val	Ala	Gly	Gln	Leu		
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Gly	Leu	Gly	Pro	Leu	His	Tyr	Ser	Leu	Asp	Ala	Ala	Cys	Ala	Ser	Ala		
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Leu	Tyr	Val	Leu	Arg	Leu	Ala	Gln	Asp	His	Leu	Leu	Ser	Gly	Glu	Ala		
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Ala	Ala	Leu	Pro	Trp	Pro	Asp	Thr	Arg	Gly	Gly	Pro	Lys	Arg	Ala	Gly		
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Glu	His	Ile	Pro	Ser	Arg	Ala	Pro	Pro	Ala	Val	Leu	Cys	Gln	Pro	Arg		
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Pro	His	Gly	Cys	Tyr	Ile	Glu	Asp	Val	Asp	Val	Asp	Phe	Lys	Arg	Leu		
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Arg	Thr	Pro	Met	Val	Pro	Glu	Asp	Leu	Leu	Arg	Pro	Gln	Gln	Leu	Leu		
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Ala	Val	Ser	Thr	Ile	Asp	Lys	Ala	Ile	Leu	Asp	Ser	Gly	Leu	Ala	Lys		
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Ala	Lys	Tyr	Met	Leu	Asp	Arg	Gly	Glu	Val	Asp	Ala	Val	Val	Val	Ala		
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	1330		1335		1340	
Leu Val Phe Ser Pro Ser Met Glu Asp Phe Val Ala Gln Leu Tyr Ser						
1345		1350		1355		1360
Arg Val Ala Asp Phe Pro Ala Ile Thr Glu Ala Val Tyr Gln Gln Gly						
	1365		1370		1375	
His Asp Val Phe Val Glu Val Gly Pro Asp His Ser Arg Ser Ala Ala						
	1380		1385		1390	
Val Arg Ser Thr Leu Gly Pro Thr Arg Arg His Ile Ala Val Ala Met						
	1395		1400		1405	
Asp Arg Lys Gly Glu Ser Ala Trp Ser Gln Leu Leu Lys Met Leu Ala						
	1410		1415		1420	
Thr Leu Ala Ser His Arg Val Pro Gly Leu Asp Leu Ser Ser Met Tyr						
1425		1430		1435		1440
His Pro Ala Val Val Glu Arg Cys Arg Leu Ala Leu Ala Ala Gln Arg						
	1445		1450		1455	
Ser Gly Gln Pro Glu Gln Arg Asn Lys Phe Leu Arg Thr Ile Glu Val						
	1460		1465		1470	
Asn Gly Phe Tyr Asp Pro Ala Asp Ala Thr Ile Pro Glu Ala Val Ala						
	1475		1480		1485	
Thr Ile Leu Pro Ala Thr Ala Ala Ile Ser Pro Pro Lys Leu Gly Ala						
	1490		1495		1500	
Pro His Asp Ser Gln Pro Glu Ala Glu Ala Arg Pro Val Gly Glu Ala						
1505		1510		1515		1520
Ser Val Pro Arg Arg Ala Thr Ser Ser Ser Lys Leu Ala Arg Thr Leu						
	1525		1530		1535	
Ala Ile Asp Ala Cys Asp Ser Asp Val Arg Ala Ala Leu Leu Asp Leu						
	1540		1545		1550	
Asp Ala Pro Ile Ala Val Gly Gly Ser Ser Arg Ala Gln Val Pro Pro						
	1555		1560		1565	
Cys Pro Val Ser Ala Leu Gly Ser Ala Ala Phe Arg Ala Ala His Gly						
1570		1575		1580		

Val	Asp	Tyr	Ala	Leu	Tyr	Met	Gly	Ala	Met	Ala	Lys	Gly	Val	Ala	Ser	1585	1590	1595	1600
Ala	Glu	Met	Val	Ile	Ala	Ala	Gly	Lys	Ala	Arg	Met	Leu	Ala	Ser	Phe	1605	1610	1615	
Gly	Ala	Gly	Gly	Leu	Pro	Leu	Gly	Glu	Val	Glu	Glu	Ala	Leu	Asp	Lys	1620	1625	1630	
Ile	Gln	Ala	Ala	Leu	Pro	Glu	Gly	Pro	Phe	Ala	Val	Asn	Leu	Ile	His	1635	1640	1645	
Ser	Pro	Phe	Asp	Pro	Asn	Leu	Glu	Glu	Gly	Asn	Val	Glu	Leu	Phe	Leu	1650	1655	1660	
Arg	Arg	Gly	Ile	Arg	Leu	Val	Glu	Ala	Ser	Ala	Phe	Met	Ser	Val	Thr	1665	1670	1675	1680
Pro	Ser	Leu	Val	Arg	Tyr	Arg	Val	Ala	Gly	Leu	Glu	Arg	Gly	Pro	Gly	1685	1690	1695	
Gly	Thr	Ala	Arg	Val	Leu	Asn	Arg	Val	Ile	Gly	Lys	Val	Ser	Arg	Ala	1700	1705	1710	
Glu	Leu	Ala	Glu	Met	Phe	Met	Arg	Pro	Pro	Pro	Ala	Ala	Ile	Val	Ser	1715	1720	1725	
Lys	Leu	Leu	Ala	Gln	Gly	Leu	Val	Thr	Glu	Glu	Gln	Ala	Ser	Leu	Ala	1730	1735	1740	
Glu	Ile	Val	Pro	Leu	Val	Asp	Asp	Val	Ala	Ile	Glu	Ala	Asp	Ser	Gly	1745	1750	1755	1760
Gly	His	Thr	Asp	Asn	Arg	Pro	Ile	His	Val	Val	Leu	Pro	Val	Val	Leu	1765	1770	1775	
Ala	Leu	Arg	Asp	Arg	Val	Met	Arg	Glu	Cys	Lys	Tyr	Pro	Ala	Ala	Asn	1780	1785	1790	
Arg	Val	Arg	Val	Gly	Ala	Gly	Gly	Gly	Ile	Gly	Cys	Pro	Ala	Ala	Ala	1795	1800	1805	
Arg	Ala	Ala	Phe	Asp	Met	Gly	Ala	Ala	Phe	Val	Leu	Thr	Gly	Ser	Ile	1810	1815	1820	
Asn	Gln	Leu	Thr	Arg	Gln	Ala	Gly	Thr	Ser	Asp	Ser	Val	Arg	Ala	Ala	1825	1830	1835	1840
Leu	Ala	Arg	Ala	Thr	Tyr	Ser	Asp	Val	Thr	Met	Ala	Pro	Ala	Ala	Asp	1845	1850	1855	
Met	Phe	Asp	Gln	Gly	Val	Lys	Leu	Gln	Val	Leu	Lys	Arg	Gly	Thr	Met	1860	1865	1870	
Phe	Pro	Ala	Arg	Ala	Asn	Lys	Leu	Tyr	Glu	Leu	Phe	Thr	Thr	Tyr	Gln	1875	1880	1885	
Ser	Leu	Asp	Ala	Ile	Pro	Arg	Ala	Glu	Leu	Ala	Arg	Leu	Glu	Lys	Arg	1890	1895	1900	
Val	Phe	Arg	Met	Ser	Ile	Asp	Glu	Val	Trp	Asn	Glu	Thr	Lys	Gln	Phe	1905	1910	1915	1920
Tyr	Glu	Thr	Arg	Leu	Asn	Asn	Pro	Ala	Lys	Val	Ala	Arg	Ala	Glu	Arg	1925	1930	1935	
Asp	Pro	Lys	Leu	Lys	Met	Ser	Leu	Cys	Phe	Arg	Trp	Tyr	Leu	Ser	Lys	1940	1945	1950	
Ser	Ser	Lys	Trp	Ala	Ser	Thr	Gly	Gln	Val	Gly	Arg	Glu	Leu	Asp	Tyr	1955	1960	1965	
Gln	Val	Trp	Cys	Gly	Pro	Thr	Ile	Gly	Ala	Phe	Asn	Glu	Phe	Val	Lys	1970	1975	1980	
Gly	Ser	Ser	Leu	Asp	Ala	Glu	Ala	Cys	Gly	Gly	Arg	Phe	Pro	Cys	Val	1985	1990	1995	2000
Val	Arg	Val	Asn	Gln	Glu	Ile	Leu	Cys	Gly	Ala	Ala	Tyr	Glu	Gln	Arg	2005	2010	2015	
Leu	Ala	Arg	Phe	Met	Leu	Leu	Ala	Gly	Arg	Glu	Ser	Ala	Asp	Ala	Leu	2020	2025	2030	
Ala	Tyr	Thr	Val	Ala	Glu	Ala	Arg									2035	2040		

<210> 12
 <211> 1476
 <212> DNA
 <213> T. aureum

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 cctgcggacc gagtcgatat cacggcgtac tacgacccga acaagacaac caaggacaag 180
 atctactgca agcgcggcgg cttcattccc gagtatgact ttgacgcgcg cgagttcggc 240
 ctcaacatgt tccagatgga ggactcggac gccaaccaaa ccgtgacttt gctcaaggtc 300
 aaggaggctc tcgaggacgc cggggtggag cccttcacaa agaagaagaa gaacattggc 360
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 tatgtggtcg tggagaaggt gcttcgcaag atgaacctcc ccgacgaggt tgcgaggcc 480
 gccgtcgaaa agtacaaggc caactttcct gaatggcgcc tcgactcggt ccctgggttt 540
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 gtcgtggacg ctgctgctgc cagctcgtc atcgcgatca aggttgccat tgatgagctc 660
 ctccacgggg actgcgacac catgattgcc ggtgcgacct gcaccgacaa ctcgatcggg 720
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 ccggtgctct tgcacgcaag ctccgcgtca gctctt 1476

<210> 13
 <211> 482
 <212> PRT
 <213> T. aureum

<400> 13
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 Gly Leu Asp Cys Leu Gln Asp Leu Pro Ala Asp Arg Val Asp Ile Thr
 35 40 45
 Ala Tyr Tyr Asp Pro Asn Arg Gly Gly Phe Ile Pro Glu Tyr Asp Phe
 50 55 60
 Asp Ala Arg Glu Phe Gly Leu Asn Met Phe Gln Met Glu Asp Ser Asp
 65 70 75 80
 Ala Asn Gln Thr Val Thr Leu Leu Lys Val Lys Glu Ala Leu Glu Asp
 85 90 95
 Ala Gly Val Glu Pro Phe Thr Lys Lys Lys Lys Asn Ile Gly Cys Val
 100 105 110
 Leu Gly Ile Gly Gly Gly Gln Lys Ala Ser His Glu Phe Tyr Ser Arg
 115 120 125
 Leu Asn Tyr Val Val Val Glu Lys Val Leu Arg Lys Met Asn Leu Pro
 130 135 140
 Asp Glu Val Val Glu Ala Val Glu Lys Tyr Lys Ala Asn Phe Pro
 145 150 155 160
 Glu Trp Arg Leu Asp Ser Phe Pro Gly Phe Leu Gly Asn Val Thr Ala

				165						170					175				
Gly	Arg	Cys	Ser	Asn	Val	Phe	Asn	Met	Glu	Gly	Met	Asn	Cys	Val	Val				
			180					185					190						
Asp	Ala	Ala	Cys	Ala	Ser	Ser	Leu	Ile	Ala	Ile	Lys	Val	Ala	Ile	Asp				
		195					200					205							
Glu	Leu	Leu	His	Gly	Asp	Cys	Asp	Thr	Met	Ile	Ala	Gly	Ala	Thr	Cys				
	210					215					220								
Thr	Asp	Asn	Ser	Ile	Gly	Met	Tyr	Met	Ala	Phe	Ser	Lys	Thr	Pro	Val				
225					230					235				240					
Phe	Ser	Thr	Asp	Gln	Ser	Val	Lys	Ala	Tyr	Asp	Ala	Lys	Thr	Lys	Gly				
				245					250					255					
Met	Leu	Ile	Gly	Glu	Gly	Ser	Ala	Met	Val	Val	Leu	Lys	Arg	Tyr	Ala				
			260					265					270						
Asp	Ala	Val	Arg	Asp	Gly	Asp	Glu	Ile	His	Ala	Val	Ile	Arg	Ala	Cys				
		275					280					285							
Ala	Ser	Ser	Ser	Asp	Gly	Lys	Ala	Ala	Gly	Ile	Tyr	Ala	Pro	Thr	Val				
	290					295					300								
Ser	Gly	Gln	Glu	Glu	Ala	Leu	Arg	Arg	Ala	Tyr	Ala	Arg	Ala	Gly	Val				
305					310					315				320					
Asp	Pro	Ser	Thr	Val	Thr	Leu	Val	Glu	Gly	His	Gly	Thr	Gly	Thr	Pro				
				325					330					335					
Val	Gly	Asp	Arg	Ile	Glu	Leu	Thr	Ala	Leu	Arg	Asn	Val	Phe	Asp	Ala				
		340						345					350						
Ala	Asn	Lys	Gly	Arg	Lys	Glu	Thr	Val	Ala	Val	Gly	Ser	Ile	Lys	Ser				
	355						360					365							
Gln	Ile	Gly	His	Leu	Lys	Ala	Val	Ala	Gly	Phe	Ala	Gly	Leu	Val	Lys				
	370					375					380								
Val	Val	Met	Ala	Leu	Lys	His	Lys	Thr	Leu	Pro	Gln	Thr	Ile	Asn	Val				
385					390					395				400					
His	Asp	Pro	Pro	Ala	Leu	His	Asp	Gly	Ser	Pro	Ile	Gln	Asp	Ser	Ser				
				405				410					415						
Leu	Tyr	Ile	Asn	Thr	Met	Asn	Arg	Pro	Trp	Phe	Thr	Ala	Pro	Gly	Val				
			420					425					430						
Pro	Arg	Arg	Ala	Gly	Ile	Ser	Ser	Phe	Gly	Phe	Gly	Gly	Ala	Asn	Tyr				
		435					440					445							
His	Ala	Val	Leu	Glu	Glu	Ala	Glu	Pro	Glu	His	Ala	Lys	Pro	Tyr	Arg				
	450					455					460								
Met	Asn	Gln	Val	Pro	Gln	Pro	Val	Leu	Leu	His	Ala	Ser	Ser	Ala	Ser				
465					470					475				480					
Ala	Leu																		

<210> 14

<211> 1329

<212> DNA

<213> T. aureum

<400> 14

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cacatgttcg	ctgacgttgc	catgaactgg	ccaccgtttc	gaagcgccgt	gcaagagatg	180
gatgccgctc	aagtcacggc	ggcagcgccg	aagcgccctc	gcgaggtcct	gtatccgcgc	240
aagccgtacg	ctgcagagcc	cgagcaagac	aacaaggcca	tctcgatgac	gattaactcg	300
caaccggccc	tcatggcctg	cgctgctggg	gcgtttgagg	tgtttcgtca	agctggtcct	360
gcgcccgcac	acgtcgcggg	tcattctctc	ggcgagtgtg	gtgctttgct	cgccgctgga	420
tgcgcaagcc	gtgaggagct	cttcgcgtct	gtctgcagca	gagcgaaggc	aatgcaagac	480
gttcccaagc	caagcgaggg	cgatcatggc	gctgtcatcg	gccgtggtgc	tgacaagctc	540
acgctgcaag	gcgatggtgc	gtggcttgcc	aactgcaact	cgccaagcca	agtgggtcatt	600
tccggcgaca	agactgctgt	cgagcgtgaa	tccagccggt	tggcaggcct	tggcttcagg	660

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atcattccgc ttgcatgcga aggcgccttc cattcaccgc acatgacggc ggcccaggcc 720
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tacaacaacg tttccggaaa gacctgccga tccctgggtg aactccgcga ctgcctgggc 840
aagcacatga caagtccctgt gctcttccag gcacaggtag agaacatgta cgctgccggg 900
gcgcgcattt tcgtggagtt tggcccgaag caagtcctct ccaagctcgt aggcgagatt 960
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gacgtgcaac ttcgtgaagc tgctgcgaag ctgcgcgtcc ttggcgtccc gttggcgaac 1080
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gtcatggagg acaactgcga cttttcttcg ctctttgcct ccggtccagc aagccaagag 1260
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acggccaaa 1329

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<210> 15
 <211> 443
 <212> PRT
 <213> T. aureum

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<400> 15
Gln Ser Ser Ala Thr Leu Glu Trp Thr Leu Leu Arg Glu Gly Val Thr
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Tyr Arg Ser Ala Met His Thr Pro Gly Ser Val Ala Ala Leu Phe
20      25      30
Ala Gly Gln Gly Ala Gln Tyr Thr His Met Phe Ala Asp Val Ala Met
35      40      45
Asn Trp Pro Pro Phe Arg Ser Ala Val Gln Glu Met Asp Ala Ala Gln
50      55      60
Val Thr Ala Ala Ala Pro Lys Arg Leu Ser Glu Val Leu Tyr Pro Arg
65      70      75      80
Lys Pro Tyr Ala Ala Glu Pro Glu Gln Asp Asn Lys Ala Ile Ser Met
85      90      95
Thr Ile Asn Ser Gln Pro Ala Leu Met Ala Cys Ala Ala Gly Ala Phe
100     105     110
Glu Val Phe Arg Gln Ala Gly Leu Ala Pro Asp His Val Ala Gly His
115     120     125
Ser Leu Gly Glu Phe Gly Ala Leu Leu Ala Ala Gly Cys Ala Ser Arg
130     135     140
Glu Glu Leu Phe Arg Leu Val Cys Ser Arg Ala Lys Ala Met Gln Asp
145     150     155     160
Val Pro Lys Pro Ser Glu Gly Val Met Ala Ala Val Ile Gly Arg Gly
165     170     175
Ala Asp Lys Leu Thr Leu Gln Gly Asp Gly Ala Trp Leu Ala Asn Cys
180     185     190
Asn Ser Pro Ser Gln Val Val Ile Ser Gly Asp Lys Thr Ala Val Glu
195     200     205
Arg Glu Ser Ser Arg Leu Ala Gly Leu Gly Phe Arg Ile Ile Pro Leu
210     215     220
Ala Cys Glu Gly Ala Phe His Ser Pro His Met Thr Ala Ala Gln Ala
225     230     235     240
Thr Phe Gln Ala Ala Leu Asp Ser Leu Lys Ile Ser Thr Pro Thr Asn
245     250     255
Gly Ala Arg Leu Tyr Asn Asn Val Ser Gly Lys Thr Cys Arg Ser Leu
260     265     270
Gly Glu Leu Arg Asp Cys Leu Gly Lys His Met Thr Ser Pro Val Leu
275     280     285
Phe Gln Ala Gln Val Glu Asn Met Tyr Ala Ala Gly Ala Arg Ile Phe
290     295     300
Val Glu Phe Gly Pro Lys Gln Val Leu Ser Lys Leu Val Gly Glu Ile
305     310     315     320

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Leu	Ala	Asp	Lys	Ser	Asp	Phe	Val	Thr	Val	Ala	Val	Asn	Ser	Ser	Ser
				325					330					335	
Ser	Lys	Asp	Ser	Asp	Val	Gln	Leu	Arg	Glu	Ala	Ala	Ala	Lys	Leu	Ala
			340					345					350		
Val	Leu	Gly	Val	Pro	Leu	Ala	Asn	Phe	Asp	Pro	Trp	Glu	Leu	Cys	Asp
		355					360					365			
Ala	Arg	Arg	Leu	Arg	Glu	Cys	Pro	Arg	Ser	Lys	Thr	Thr	Leu	Arg	Leu
	370					375					380				
Ser	Ala	Ala	Thr	Tyr	Val	Ser	Asn	Lys	Thr	Leu	Ala	Ala	Arg	Glu	Lys
385					390					395				400	
Val	Met	Glu	Asp	Asn	Cys	Asp	Phe	Ser	Ser	Leu	Phe	Ala	Ser	Gly	Pro
				405					410					415	
Ala	Ser	Gln	Glu	Met	Glu	Arg	Glu	Ile	Ala	Asn	Leu	Arg	Ala	Glu	Leu
			420					425					430		
Glu	Ala	Ala	Gln	Arg	Gln	Leu	Asp	Thr	Ala	Lys					
		435					440								

<210> 16
<211> 267
<212> DNA
<213> T. aureum

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gagctcggga	tcgactcggg	caagcgcatt	gagatcctgg	cagctgtcca	ggcccagctc		180
ggggctcgagg	ccaaggacgt	cgacgcgctc	agccgcacac	gaacagttgg	cgaggtcggt		240
gcgcccata	aggctgagat	cggcggg					267

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<210> 17
<211> 89
<212> PRT
<213> T. aureum
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[illegible]

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<210> 18
<211> 2466
<212> DNA
<213> T. aureum
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gatggatcag	cattgccggc	ggctctggct	agtcgactgg	ggtcgtgtgc	agtaatacctc		180
acgacgcgag	gcgagaccga	ccaatctgtg	cgctcgacga	agcacgttga	catggaaggg		240
tggggcgagg	cagatctcgt	gcgcgctctt	gaagcagtag	agtcctcgatt	cggcgtccca		300

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tgcttcgttg gcgtctcgcg aatcgacgga aagctcggac ttagcggagc ttgcgcgaaa 480
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tcgttt

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<210> 19
 <211> 825
 <212> PRT
 <213> T. aureum

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<400> 19
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20          25          30
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35          40          45
Pro Ala Ala Leu Ala Ser Arg Leu Gly Ser Cys Ala Val Ile Leu Thr
50          55          60
Thr Ala Gly Glu Thr Asp Gln Ser Val Arg Ser Thr Lys His Val Asp
65          70          75          80
Met Glu Gly Trp Gly Glu Ala Asp Leu Val Arg Ala Leu Glu Ala Val
85          90          95
Glu Ser Arg Phe Gly Val Pro Gly Gly Val Val Val Leu Glu Arg Ala
100         105         110
Ser Glu Thr Ala Arg Asp Gln Leu Gly Phe Ala Leu Leu Leu Ala Lys

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		115					120					125			
His	Ser	Ser	Lys	Ala	Leu	Asn	Gln	Gln	Ile	Pro	Gly	Gly	Arg	Ala	Cys
	130					135					140				
Phe	Val	Gly	Val	Ser	Arg	Ile	Asp	Gly	Lys	Leu	Gly	Leu	Ser	Gly	Ala
145					150					155					160
Cys	Ala	Lys	Gly	Lys	Gly	Trp	Ala	Glu	Ala	Ala	Glu	Ile	Ala	Gln	Gln
				165					170					175	
Gly	Ala	Val	Ala	Gly	Leu	Cys	Lys	Thr	Leu	Asp	Leu	Glu	Trp	Pro	His
			180					185					190		
Val	Phe	Ala	Arg	Ser	Ile	Asp	Ile	Glu	Leu	Gly	Ala	Asn	Glu	Glu	Thr
		195					200					205			
Ala	Ala	Gln	Ala	Ile	Phe	Glu	Glu	Leu	Ser	Cys	Pro	Asp	Leu	Thr	Val
		210				215					220				
Arg	Glu	Ala	Gly	Tyr	Thr	Lys	Asp	Gly	Lys	Arg	Trp	Thr	Thr	Glu	Ala
225					230					235					240
Arg	Pro	Val	Gly	Leu	Gly	Lys	Pro	Lys	Gln	Ala	Leu	Arg	Ser	Ser	Asp
				245					250					255	
Val	Phe	Leu	Val	Ser	Gly	Gly	Ala	Arg	Gly	Ile	Thr	Pro	Val	Cys	Val
			260					265					270		
Arg	Glu	Leu	Ala	Lys	Ser	Ile	Ser	Gly	Gly	Thr	Phe	Val	Leu	Leu	Gly
			275					280				285			
Arg	Ser	Pro	Leu	Ala	Asp	Asp	Pro	Ala	Trp	Ala	Cys	Gly	Val	Glu	Glu
					295						300				
Ala	Asn	Ile	Gly	Thr	Ala	Ala	Met	Ala	His	Leu	Lys	Ala	Glu	Phe	Ala
305					310					315					320
Ala	Gly	Arg	Gly	Pro	Lys	Pro	Thr	Pro	Lys	Ala	His	Lys	Ala	Leu	Val
				325					330					335	
Gly	Ser	Val	Leu	Gly	Ala	Arg	Glu	Val	Leu	Gly	Ser	Leu	Glu	Ser	Ile
			340					345					350		
Arg	Ala	Gln	Gly	Ala	Arg	Ala	Glu	Tyr	Val	Ser	Cys	Asp	Val	Ser	Cys
			355				360					365			
Ala	Glu	Arg	Val	Lys	Ala	Val	Val	Asp	Asp	Leu	Glu	Arg	Arg	Val	Gly
					375						380				
Ala	Val	Thr	Gly	Val	Val	His	Ala	Ser	Gly	Val	Leu	Arg	Asp	Lys	Ser
385					390					395					400
Val	Glu	Arg	Leu	Glu	Leu	Ala	Asp	Phe	Glu	Val	Val	Tyr	Gly	Thr	Lys
				405					410				415		
Val	Asp	Gly	Leu	Leu	Asn	Leu	Leu	Gln	Ala	Val	Asp	Arg	Pro	Lys	Leu
			420					425					430		
Arg	His	Leu	Val	Leu	Phe	Ser	Ser	Leu	Ala	Gly	Phe	His	Gly	Asn	Thr
			435				440					445			
Gly	Gln	Ala	Val	Tyr	Ala	Met	Ala	Asn	Glu	Ala	Leu	Asn	Lys	Met	Ala
					455						460				
Phe	His	Leu	Glu	Thr	Ala	Met	Pro	Gly	Leu	Ser	Val	Lys	Thr	Ile	Gly
465															

Gly Ile Glu Asp Ala Gln Val Phe Gln Gly Val Val Leu Asp Lys Gly
 595 600 605
 Ala Thr Cys Glu Val Gln Leu Arg Arg Glu Ser Ser Thr Ala Ser Pro
 610 615 620
 Ser Glu Val Val Leu Ser Ala Ser Leu Asn Val Phe Ala Ala Gly Lys
 625 630 635 640
 Val Val Pro Ala Tyr Arg Ala His Val Val Leu Gly Ala Ser Gly Pro
 645 650 655
 Arg Thr Gly Gly Val Gln Leu Glu Leu Lys Asp Leu Gly Val Asp Ala
 660 665 670
 Asp Pro Ala Cys Ser Val Gly Lys Gly Ala Leu Tyr Asp Gly Arg Thr
 675 680 685
 Leu Phe His Gly Pro Ala Phe Gln Tyr Met Asp Glu Val Leu Arg Cys
 690 695 700
 Ser Pro Ala Glu Leu Ala Val Arg Cys Arg Val Val Pro Ser Ala Ala
 705 710 715 720
 Gln Asp Arg Gly Gln Phe Val Ser Arg Gly Val Leu Tyr Asp Pro Phe
 725 730 735
 Leu Asn Asp Thr Val Phe Gln Ala Leu Leu Val Trp Ala Arg Leu Val
 740 745 750
 Arg Asp Ser Ala Ser Leu Pro Ser Asn Val Glu Arg Ile Ser Phe His
 755 760 765
 Gly Gln Pro Pro Ser Glu Gly Glu Val Phe Tyr Thr Thr Leu Lys Leu
 770 775 780
 Asp Ser Ala Ala Ser Gly Pro Leu Asp Pro Ile Ala Lys Ala Gln Phe
 785 790 795 800
 Phe Leu His Arg Ala Cys Gly Ala Val Phe Ala Ser Gly Arg Ala Ser
 805 810 815
 Val Val Leu Asn Lys Ala Leu Ser Phe
 820 825

<210> 20
 <211> 1383
 <212> DNA
 <213> T. aureum

<400> 20
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 gcgttcttgg acacgctcat gaacggcaaa atcaactctg cctgtatctc agacgatcgc 180
 ctcgggctcag caccgacaga agagcactat gcgcccgcga ggtcaaagta cgccgatacg 240
 ttctgcaacg agaggtacgg atgcatcgat cccaaagtcg acaacgagca cgacctgctc 300
 ctcggcctcg ccgcggctgc gcttcaagac gcgcaggaca ggcgacgca cggcggcaag 360
 ttcgacccag cgcagctcaa gcgctgcggc attgtcagcg gctgcctgtc cttcccgatg 420
 gacaacctgc aaggcgagct gctcaacctt taccaagccc atgctgagag gcggattggc 480
 aagcattgct tcgcggacca aacgccctgg tcgacgcgaa ccagagcgct tcacccgctg 540
 cccggggacc cgaggacca ccgcgacca gcctccttcg tcgcgggaca gctcggcctc 600
 ggcccgcctgc actactcgtc cgacgcgcgc tgccgctcgg ccctttacgt tctgcgactc 660
 gctcaggacc acctcctctc gggcgaggct gacttgatgc tgtgcggagc gacgtgcttc 720
 ccagagccct tcttcctcct gactgggttt agcacgttcc acgcgatgcc agtcggtgag 780
 aacggtgtct cgatgccgtt tcatcgggac acgcaagggc tgacgcccgg cgaggggcggc 840
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 acgcttcttg gagccagctt gagcaacgca ggctgcgggc ttctctctca gccgcaccag 960
 ccaagcgagg aggcctgctt gaaagccacc tacgagctcg tcggcgtgcc gccccgagac 1020
 gtccagtagc tcgagtgcc cgccaccggc acgcccgcagg gcgacaccgt cgagctccaa 1080
 gccgtcaaa cctgctttga gggcgcaagc ccccgatcg ggtccacgaa aggcaacttc 1140
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 cgcggcgtag tcccccgac cccgggcgtt gactctggca ccagattga tcccctcgtc 1260
 gtcacagcgg cgctcccgtg gccggatagc cgcggcgggc cgaaacgcgc aggactctcc 1320

gcattcggat tcggggggcac aaacgcgcac gccgtctttg aggagcatat tccctcgaga 1380
gct 1383

<210> 21
<211> 461
<212> PRT
<213> T. aureum

<400> 21
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Tyr Ala Gly Cys Arg Gly Lys Glu Ala Phe Trp Asp Thr Leu Met Asn
35 40 45
Gly Lys Ile Asn Ser Ala Cys Ile Ser Asp Asp Arg Leu Gly Ser Ala
50 55 60
Arg Arg Glu Glu His Tyr Ala Pro Glu Arg Ser Lys Tyr Ala Asp Thr
65 70 75 80
Phe Cys Asn Glu Arg Tyr Gly Cys Ile Asp Pro Lys Val Asp Asn Glu
85 90 95
His Asp Leu Leu Gly Leu Ala Ala Leu Gln Asp Ala Gln
100 105 110
Asp Arg Arg Ser Asp Gly Gly Lys Phe Asp Pro Ala Gln Leu Lys Arg
115 120 125
Cys Gly Ile Val Ser Gly Cys Leu Ser Phe Pro Met Asp Asn Leu Gln
130 135 140
Gly Glu Leu Leu Asn Leu Tyr Gln Ala His Ala Glu Arg Arg Ile Gly
145 150 155 160
Lys His Cys Phe Ala Asp Gln Thr Pro Trp Ser Thr Arg Thr Arg Ala
165 170 175
Leu His Pro Leu Pro Gly Asp Pro Arg Thr His Arg Asp Pro Ala Ser
180 185 190
Phe Val Ala Gly Gln Leu Gly Leu Gly Pro Leu His Tyr Ser Leu Asp
195 200 205
Ala Ala Cys Ala Ser Ala Leu Tyr Val Leu Arg Leu Ala Gln Asp His
210 215 220
Leu Leu Ser Gly Glu Ala Asp Leu Met Leu Cys Gly Ala Thr Cys Phe
225 230 235 240
Pro Glu Pro Phe Phe Ile Leu Thr Gly Phe Ser Thr Phe His Ala Met
245 250 255
Pro Val Gly Glu Asn Gly Val Ser Met Pro Phe His Arg Asp Thr Gln
260 265 270
Gly Leu Thr Pro Gly Glu Gly Gly Ser Val Met Val Leu Lys Arg Leu
275 280 285
Ala Asp Ala Glu Arg Asp Gly Asp His Ile Tyr Gly Thr Leu Leu Gly
290 295 300
Ala Ser Leu Ser Asn Ala Gly Cys Gly Leu Pro Leu Lys Pro His Gln
305 310 315 320
Pro Ser Glu Glu Ala Cys Leu Lys Ala Thr Tyr Glu Leu Val Gly Val
325 330 335
Pro Pro Arg Asp Val Gln Tyr Val Glu Cys His Ala Thr Gly Thr Pro
340 345 350
Gln Gly Asp Thr Val Glu Leu Gln Ala Val Lys Ala Cys Phe Glu Gly
355 360 365
Ala Ser Pro Arg Ile Gly Ser Thr Lys Gly Asn Phe Gly His Thr Leu
370 375 380
Val Ala Ala Gly Phe Ala Gly Met Cys Lys Val Leu Leu Ala Met Glu
385 390 395 400

Arg	Gly	Val	Ile	Pro	Pro	Thr	Pro	Gly	Val	Asp	Ser	Gly	Thr	Gln	Ile
				405					410					415	
Asp	Pro	Leu	Val	Val	Thr	Ala	Ala	Leu	Pro	Trp	Pro	Asp	Thr	Arg	Gly
			420					425					430		
Gly	Pro	Lys	Arg	Ala	Gly	Leu	Ser	Ala	Phe	Gly	Phe	Gly	Gly	Thr	Asn
		435					440					445			
Ala	His	Ala	Val	Phe	Glu	Glu	His	Ile	Pro	Ser	Arg	Ala			
	450					455					460				

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<210> 22
<211> 1335
<212> DNA
<213> T. aureum
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<400>	22					
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gcgcggcccc	tgcctgcgaa	gcgctggcgc	ttcttgggcg	gggacgagtc	ctttctccac	180
gagatcggac	tcgagtgcctc	tccgcacggg	tgctacattg	aggacgtgga	tgtggacttt	240
aagcgactcc	gcacgccaat	ggtgcggag	gacctgctcc	ggccgcaaca	gctcctggcc	300
gtgtcgacga	ttgacaaggc	catctcgac	tcgggcttgg	ccaaggcgcg	caacgtggct	360
gtccttgtcg	gcctcgggac	ggacctcgag	ctctaccgcc	accgagctcg	ggttgcgctt	420
aaggagcgtc	ttcaaggact	ggttcgctct	gccgagggag	gagccctgac	gtctcgcttg	480
atgaactata	tcaatgatag	cggaacgtcg	acctcttaca	cgtcgtatat	cggcaacctc	540
gtcgccacgc	gcgtctcgtc	ccagtggggc	ttacttgggc	cgtcgttcac	cgtcacggaa	600
ggggccaact	cggtcocatcg	gtgcgcccag	ctcgccaagt	acatgctcga	ccgcggcgag	660
gtcgacgccg	tcgtggttgc	aggagtgcac	ctgtgcggga	gcgcgcaggc	gttcttcgtg	720
aggtcgcgcc	gcatcgagat	ctcgaaaagt	cagcgcccgg	ccgcgcggtt	tgaccgcgcc	780
gcagacggtc	tcttcgcggg	ggaagggtgc	ggcgccctcg	tcttcaaacy	cctgactgac	840
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cgcgccgctc	ttcgtgctgc	cgcagggctg	gcgcggggtg	accagccag	catcgacatg	960
gtcgagctga	gcgcagattc	ccaccggttt	gtgcgggcgc	caggcaccgt	ggctcagcct	1020
ctgacagccg	aagtcgaggt	cggggcggtg	cgggaagtga	tcgggaccgc	ggggaggggc	1080
tctcgaagcg	tggccgtcgg	atcggtccgc	gccaaacgtcg	gggacgcagg	gtttgcttcc	1140
ggggccgctg	ccctcgtaaa	aactgcgctc	tgcttgacaca	accgctactt	ggcggetacc	1200
ccaggtcggg	atgcgcctgc	tgccggcggtg	gattttggtg	ccgagctgta	cgtttgccgc	1260
gagtcgcgtg	cttgggtcaa	gaacgcgggc	gttgcacggc	acgccgcaat	ttctggcgctg	1320
qacqaagqcq	qqtcg					1335

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<210> 23
<211> 445
<212> PRT
<213> T. aureum
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<400> 23															
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Met	Asp	Ala	Thr	Phe	Gly	Ser	Leu	Lys	Gly	Leu	Ser	Ala	Leu	Glu	Ala
			20					25					30		
Ala	Leu	Tyr	Glu	Ala	Arg	His	Ala	Ala	Arg	Pro	Leu	Pro	Ala	Lys	Arg
		35					40					45			
Trp	Arg	Phe	Leu	Gly	Gly	Asp	Glu	Ser	Phe	Leu	His	Glu	Ile	Gly	Leu
	50					55					60				
Glu	Cys	Ser	Pro	His	Gly	Cys	Tyr	Ile	Glu	Asp	Val	Asp	Val	Asp	Phe
65					70					75				80	
Lys	Arg	Leu	Arg	Thr	Pro	Met	Val	Pro	Glu	Asp	Leu	Leu	Arg	Pro	Gln
				85					90					95	
Gln	Leu	Leu	Ala	Val	Ser	Thr	Ile	Asp	Lys	Ala	Ile	Leu	Asp	Ser	Gly
			100					105					110		

Leu Ala Lys Gly Gly Asn Val Ala Val Leu Val Gly Leu Gly Thr Asp
 115 120 125
 Leu Glu Leu Tyr Arg His Arg Ala Arg Val Ala Leu Lys Glu Arg Leu
 130 135 140
 Gln Gly Leu Val Arg Ser Ala Glu Gly Gly Ala Leu Thr Ser Arg Leu
 145 150 155 160
 Met Asn Tyr Ile Asn Asp Ser Gly Thr Ser Thr Ser Tyr Thr Ser Tyr
 165 170 175
 Ile Gly Asn Leu Val Ala Thr Arg Val Ser Ser Gln Trp Gly Phe Thr
 180 185 190
 Gly Pro Ser Phe Thr Val Thr Glu Gly Ala Asn Ser Val His Arg Cys
 195 200 205
 Ala Gln Leu Ala Lys Tyr Met Leu Asp Arg Gly Glu Val Asp Ala Val
 210 215 220
 Val Val Ala Gly Val Asp Leu Cys Gly Ser Ala Glu Ala Phe Phe Val
 225 230 235 240
 Arg Ser Arg Arg Met Gln Ile Ser Lys Ser Gln Arg Pro Ala Ala Pro
 245 250 255
 Phe Asp Arg Ala Ala Asp Gly Phe Phe Ala Gly Glu Gly Cys Gly Ala
 260 265 270
 Leu Val Phe Lys Arg Leu Thr Asp Cys Val Ser Gly Glu Arg Ile Tyr
 275 280 285
 Ala Ser Leu Asp Ser Val Val Ala Thr Thr Pro Arg Ala Ala Leu
 290 295 300
 Arg Ala Ala Ala Gly Ser Ala Arg Val Asp Pro Ala Ser Ile Asp Met
 305 310 315 320
 Val Glu Leu Ser Ala Asp Ser His Arg Phe Val Arg Ala Pro Gly Thr
 325 330 335
 Val Ala Gln Pro Leu Thr Ala Glu Val Glu Val Gly Ala Val Arg Glu
 340 345 350
 Val Ile Gly Thr Ala Gly Arg Gly Ser Arg Ser Val Ala Val Gly Ser
 355 360 365
 Val Arg Ala Asn Val Gly Asp Ala Gly Phe Ala Ser Gly Ala Ala Ala
 370 375 380
 Leu Val Lys Thr Ala Leu Cys Leu His Asn Arg Tyr Leu Ala Ala Thr
 385 390 395 400
 Pro Gly Trp Asp Ala Pro Ala Ala Gly Val Asp Phe Gly Ala Glu Leu
 405 410 415
 Tyr Val Cys Arg Glu Ser Arg Ala Trp Val Lys Asn Ala Gly Val Ala
 420 425 430
 Arg His Ala Ile Ser Gly Val Asp Glu Gly Gly Ser
 435 440 445

<210> 24

<211> 1488

<212> DNA

<213> T. aureum

<400> 24

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gacaagggtg	cggccgagct	cgcagccctt	gagcaagccg	acggcttgag	cgcgcgcgcg	180
gctgccgtag	accgcttact	cggcgagtcg	ctcgtcgggt	gcgcggctgg	cagcggcggg	240
ctgacccttt	gcttggtggc	ttgcctgcc	agcctccaca	aggagcttgc	gctggcccat	300
cgagggatcc	cgcgctgcat	caaagcacgg	cgcgactggg	ccagcccggc	agggagctac	360
ttcgccccgg	agccgatcgc	aagcgaccgc	gtcgcgttca	tgtacgggga	aggacgaagc	420
ccgtactgcg	gcgtcggccg	cgacctccac	cggatctggc	ccgcgctgca	tgagcgggtg	480
aacgccaaga	ctgtcaacct	ctgggggtgac	ggtgacgcct	ggctgctgcc	acgtgcaacc	540
tcggccgagg	aagaggagca	actctgccgc	aacttcgact	cgaaccaggt	tgagatgttt	600

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cgaacgggcg tgtacatctc gatgtgcttg accgacctcg ctcgaagctt gattggactg      660
ggccctaagg cgagctttgg gctcagccta ggcgaggttt ccatgctctt cgctctgagc      720
gagtcctaact gtagactgtc ggaggaaatg acccgcaggc tccgtgcgtc cccggtgtgg      780
aactcggagc tcgccgtcga gttcaacgcc cttcgaaagt tgtggggggg cgcgccgggg      840
gcacccgtcg actcgttctg gcaagggttat gtcgtgcgcg caacgcgggc tcaggtggag      900
caagccattg gggaggacaa tcagtttgtg cgtctcctga tcgtgaacga ctcgcaatca      960
gtcctgatcg ccggcaagcc ggcggcgtgc gaagccgtaa ttgctcgcat cgggtctatt     1020
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tactcgcgag ttgcagactt tccggcgatc accgaggcgg tttaccagca gggcatgac     1320
gtgtttgtcg aagtggggcc ggaccattca cggtcggctg ctgtccgctc cacgcttga     1380
cccactcggc gacacatcgc tgtggcgatg gaccgcaagg gtgagtcagc ttggtcgcag     1440
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<210> 25

<211> 496

<212> PRT

<213> T. aureum

<400> 25

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      20      25      30
Ala Pro Asp His Ala Ala Leu Leu Asp Lys Val Ala Ala Glu Leu Ala
      35      40      45
Ala Leu Glu Gln Ala Asp Gly Leu Ser Ala Ala Ala Ala Ala Val Asp
      50      55      60
Arg Leu Leu Gly Glu Ser Leu Val Gly Cys Ala Ala Gly Ser Gly Gly
      65      70      75      80
Leu Thr Leu Cys Leu Val Ala Ser Pro Ala Ser Leu His Lys Glu Leu
      85      90      95
Ala Leu Ala His Arg Gly Ile Pro Arg Cys Ile Lys Ala Arg Arg Asp
      100      105      110
Trp Ala Ser Pro Ala Gly Ser Tyr Phe Ala Pro Glu Pro Ile Ala Ser
      115      120      125
Asp Arg Val Ala Phe Met Tyr Gly Glu Gly Arg Ser Pro Tyr Cys Gly
      130      135      140
Val Gly Arg Asp Leu His Arg Ile Trp Pro Ala Leu His Glu Arg Val
      145      150      155      160
Asn Ala Lys Thr Val Asn Leu Trp Gly Asp Gly Asp Ala Trp Leu Leu
      165      170      175
Pro Arg Ala Thr Ser Ala Glu Glu Glu Glu Gln Leu Cys Arg Asn Phe
      180      185      190
Asp Ser Asn Gln Val Glu Met Phe Arg Thr Gly Val Tyr Ile Ser Met
      195      200      205
Cys Leu Thr Asp Leu Ala Arg Ser Leu Ile Gly Leu Gly Pro Lys Ala
      210      215      220
Ser Phe Gly Leu Ser Leu Gly Glu Val Ser Met Leu Phe Ala Leu Ser
      225      230      235      240
Glu Ser Asn Cys Arg Leu Ser Glu Glu Met Thr Arg Arg Leu Arg Ala
      245      250      255
Ser Pro Val Trp Asn Ser Glu Leu Ala Val Glu Phe Asn Ala Leu Arg
      260      265      270
Lys Leu Trp Gly Val Ala Pro Gly Ala Pro Val Asp Ser Phe Trp Gln
      275      280      285
Gly Tyr Val Val Arg Ala Thr Arg Ala Gln Val Glu Gln Ala Ile Gly

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290		295		300
Glu Asp Asn Gln Phe Val Arg Leu Leu Ile Val Asn Asp Ser Gln Ser				
305		310		315
Val Leu Ile Ala Gly Lys Pro Ala Ala Cys Glu Ala Val Ile Ala Arg				
	325		330	
Ile Gly Ser Ile Leu Pro Pro Leu Gln Val Ser Gln Gly Met Val Gly				
	340		345	
His Cys Ala Glu Val Leu Pro Tyr Thr Ser Glu Ile Gly Arg Ile His				
	355		360	
Asn Met Leu Arg Phe Pro Ser Gln Asp Glu Thr Gly Gly Cys Lys Met				
	370		375	
Tyr Ser Ser Val Ser Asn Ser Arg Ile Gly Pro Val Glu Glu Ser Gln				
385		390		395
Met Gly Pro Gly Thr Glu Leu Val Phe Ser Pro Ser Met Glu Asp Phe				
	405		410	
Val Ala Gln Leu Tyr Ser Arg Val Ala Asp Phe Pro Ala Ile Thr Glu				
	420		425	
Ala Val Tyr Gln Gln Gly His Asp Val Phe Val Glu Val Gly Pro Asp				
	435		440	
His Ser Arg Ser Ala Ala Val Arg Ser Thr Leu Gly Pro Thr Arg Arg				
	450		455	
His Ile Ala Val Ala Met Asp Arg Lys Gly Glu Ser Ala Trp Ser Gln				
465		470		475
Leu Leu Lys Met Leu Ala Thr Leu Ala Ser His Arg Val Pro Gly Leu				
	485		490	
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<210> 26

<211> 1683

<212> DNA

<213> T. aureum

<400> 26

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tctgtgccaa	ggcggggccac	gagctcgagc	aaattggcca	ggacgcttgc	catcgatgct	180
tgcgactccg	acgtgcgcgc	cgccttgctg	gacctggacg	cgccaatcgc	ggtcggcggc	240
tcctcgcgcg	cccaagtccc	gccgtgcccc	gtgagcgcgc	tcggaagcgc	cgcctttcga	300
gcggcacacg	gcgtcgatta	tgcgctctac	atgggcgcaa	tggccaaagg	cgtcgcgtca	360
gcggagatgg	tcacgcgtgc	tggcaaggcc	cgcatgctcg	cgtcatttgg	cgcggggggg	420
cttcccctgg	gcgaggtcga	agaggcggtg	gacaagatcc	aggccgctct	gcccgaaggg	480
ccgttcgcgcg	tcaacctcat	tcactcgccg	ttcgatccaa	accttgagga	gggcaacgtc	540
gagctgttcc	tgaggcgcgg	tatccggctg	gtcgaggcct	ctgcgttcat	gtcggtcacg	600
ccgtcgttgg	tgcgtaccg	agtcgcggga	ctcgagcgag	gccctggcgg	gaccgcccga	660
gtgctgaacc	gcgtgattgg	caaggtgagc	cgtgcggagc	tcgcagaaat	gtttatgcgg	720
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gcgtcacttg	cagagatcgt	cccactgggt	gacgacgttg	caatcgaagc	cgactcgggc	840
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cgcgtcatgc	gtgagtgcaa	gtatccagcc	gccaatcgcg	tccgcgtggg	cgccggaggc	960
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